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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/865,990

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Larry I. Gritz

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10/01/2004

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EXAMINER

WALLACE, SCOTT A

ART UNIT

PAPER NUMBER

2671

DATE MAILED: 10/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/865,990

Applicant(s)

GRITZ ET AL.

Examiner

Scott Wallace

Art Unit

2671

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-133 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 109, 116-118, 120-122, 126-128, 131 and 132 is/are allowed.
- 6) ☒ Claim(s) 1-5, 55, 64, 65, 112-114, 119, 123-125, 129, 130 and 133 is/are rejected.
- 7) ☒ Claim(s) 6-54, 56-63, 66-108, 110 and 111 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 15 04/08/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***Response to Arguments***

1. Applicant's arguments with respect to claims 1-133 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Objections***

2. Claim 82 is objected to because of the following informalities: Claim 82 is a duplicate claim of claim 76. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 114, 119, 125, 129, 130 are rejected under 35 U.S.C. 102(e) as being anticipated by Jones et al., U.S. Patent No. 6,700,672.
5. As per claims 114 and 125, Jones et al discloses wherein characteristic information of each pixel is determined by line sampling object scene data (column 3 lines 10-15), wherein a line sample is positioned within a boundary of each pixel in a non-regular pattern (abstract and column 6 lines 45-59 and column 8 lines 31-41).

6. As per claim 119, Jones et al discloses a method for line sampling image data in a computer system for determining characteristic information of a pixel (column 3 lines 10-15), comprising: defining a plurality of sample areas comprising at least a portion of a pixel (column 3 lines 10-15); selecting line sample positions within said areas such that the distribution of line samples is non-regular (column 6 lines 45-59 and column 8 lines 31-41); and combining characteristic information of the line samples in the pixel, thereby to determine characteristic information of the pixel (column 3 lines 10-15).

7. As per claim 129, Jones et al discloses a computer program product for use in conjunction with a computer system (column 1 lines 10-15), the computer program product comprising a computer readable storage medium and a computer program mechanism embedded therein, the computer program mechanism comprising instructions for forming a video image frame that specifies characteristic information of each pixel of an array of pixels that forms the video image frame (column 3 lines 10-15), wherein the instructions determine characteristic information of each pixel by line sampling object scene data at a position within a boundary of each of said pixels (column 3 lines 10-15) and by point sampling object scene data at a position within the boundary of each of said pixels (column 3 lines 65-67 and column 4 lines 1-7).

8. As per claim 130, Jones et al discloses a computer program product for use in conjunction with a computer system (column 1 lines 10-15), the computer program product comprising a computer readable storage medium and a computer program mechanism embedded therein, the computer program mechanism comprising: instructions for defining a plurality of sample areas comprising at least a portion of a pixel (column 3 lines 65-67 and column 4 lines 1-8); instructions for selecting line sample positions within said areas such that the distribution of line samples is non-regular (column 6 lines 45-59 and column 8 lines 31-41); and instructions for combining characteristic information of the line samples in the pixel, thereby to determine characteristic information of the pixel (column 3 lines 10-15).

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-5, 55, 64-65, 112-113, 123-124, 133 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al., U.S. Patent No. 6,700,672.

11. As per claims 1 and 133, Jones et al discloses a method of forming a view of an object scene (column 2 lines 49-53 and fig 1a, #104 is the object; any time an image is generated you are also forming a view of the object), comprising: distributing a set of line samples across an object scene (column 2 lines 49-56 and column 3 lines 10-15) such that the distribution of the set of line samples is non-regular (column 6 lines 45-58 and column 8 lines 31-40 and fig 13, #1304). However, Jones et al does not specifically disclose computing a view of the object scene along each line sample in the set of line samples; and combining the view of the object scene along each line sample in the set of line samples to form a view of the object scene. This would have been obvious to one of ordinary skill in the art at the time the invention was made because when you generate an image you are also forming a view of the image from the object and this view is dependent on the view of each sample used. You have to know the view in order to generate the image. Jones discloses in column 3 lines 11-15 using multiple line samples for each pixel and weighted coverage values of the line samples are combined to produce a combined weighted coverage value which is associated with the pixel.

12. As per claim 2, Jones et al discloses further comprising transforming an object in the object scene from a three-dimensional representation to a two-dimensional representation (column 2 lines 49-56, generating an image on a display from an object is always going from the 3D object to the 2D display).

13. As per claim 3, Jones et al discloses wherein the distributing step includes projecting objects in the object scene onto an image plane (column 2 lines 49-52, when you generate an image of an object you are projecting it onto a 2D view plane); positioning the set of line samples on the image plane (column 2 lines 49-52 and column 6 lines 45-50, the line sample is oriented with the pixel which is on the plane).

14. As per claim 4, Jones et al discloses selecting an orientation for a line sample from the set of line samples (column 6 lines 45-50); and choosing a plane for the line sample, whereby the line sample passes through the chosen plane with the selected orientation (column 6 lines 45-50 and fig 1b).

15. As per claim 5, Jones et al discloses wherein the orientation is greater than or equal to zero-degrees and less than one hundred and eighty-degrees (fig 1a).

16. As per claim 55, Jones et al discloses isolating a segment of the line sample that overlaps an object (fig 3a); and calculating a distance of the object from the segment (fig 3a, d1, column 5 lines 30-43).

17. As per claim 64, Jones et al discloses wherein the distance is calculated from a first end of the segment (fig. 3a, d2).

18. As per claim 65, Jones et al discloses further comprising calculating a second distance of the object from the segment, wherein the second distance is calculated from a second end of the segment (fig 3a, d1).

19. As per claims 112 and 123, Jones et al discloses a method of sampling object scene data (column 2 lines 49-57), comprising: distributing a set of line samples across an image plane such that the distribution of the line samples is non-regular (column 6 lines 45-59 and column 8 lines 31-41 and fig 13, #1304); projecting objects defined in object scene data onto the image plane (column 2 lines 49-57, anytime time you generate an image form object data you are projecting the image onto a 2D viewing plane, the display). However, Jones et al does not specifically disclose computing a view of objects each line sample in the set of line samples overlaps; and combining the view of objects each line sample overlaps. This would have been obvious to one of ordinary skill in the art at the time the invention was made because generating when you generate an image you are also forming a view of the image from

the object and this view is dependent on the view of each sample used. You have to know the view in order to generate the image. Jones discloses in column 3 lines 11-15 using multiple line samples for each pixel and weighted coverage values of the line samples are combined to produce a combined weighted coverage value which is associated with the pixel.

20. As per claims 113 and 124, this claim is similar to claims 112 and 123 as seen above and thus rejection is the same as for claim 112. The defining an array of pixels from object scene data and using the line samples for scene data is disclosed in the abstract.

***Allowable Subject Matter***

21. Claims 6-54, 56-63, 66-108, 110-111 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

22. Claims 109, 116-118, 120-122, 126-128, 131-132 allowed.

23. The following is a statement of reasons for the indication of allowable subject matter: Prior art of reference fails to teach orienting the line sample by reference to a non-regular sequence of numbers and determining a view of the objects along each line sample in the set of line samples by reference to the position of object in the object scene and the plurality of characteristics of the optical imaging system including an aperture size and a focal plane relative to objects in an object scene. Also prior art of reference fails to teach distributing line samples in a non-regular temporal distribution within a time period associated with the video image frame.

**Any response to this action should be mailed to:**

**Application/Control Number: 09/865,990**  
**Art Unit: 2671**

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Commissioner of Patents and Trademarks  
Washington, D.C. 20231

or faxed to:

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA,  
Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be  
directed to the Technology Center 2600 Customer Service Office whose telephone number is  
(703) 306-0377.

Any inquiry concerning this communication or earlier communications from the examiner should  
be directed to Scott Wallace whose telephone number is 703-605-5163. The examiner can normally be  
reached on Monday thru Friday from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark  
Zimmerman, can be reached on 703-305-9798. The fax phone number for the organization where this  
application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application  
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SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600